

What is claimed is:

1. The method of varying the heat-induced solid state
5 polymerization reactivity of a substituted diacetylenic monomer
shelf life monitoring system composition component which
comprises:

- a) providing a solution of said monomer component in a first state of said reactivity at a temperature below the reflux 10 temperature of said solution,
- b) heating said solution to said reflux temperature in a reflux system,
- c) continuing reflux of said solution for a predetermined time period, and
- 15 d) recrystallizing the solute from said refluxed solution to thereby yield said monomer component in a second state of said reactivity.

2. The method according to claim 1 wherein said reflux period 20 extends up to about 45 minutes.

3. The method according to claim 1 wherein the solvent of said solution is selected from the group consisting of acetic acid and dimethyl formamide.

25 4. The method according to claim 3 wherein said reflux period extends from about one to 15 minutes.

30 5. The method according to claim 1 wherein said monomer component is selected from the group consisting of 2,4-hexadiyn-1,6-bis(alkylurea) compounds and co-crystallized combinations thereof.

6. The method according to claim 5 wherein said monomer component is selected from the group consisting of ethyl-, propyl-, and octyl-substituted 2,4-hexadiyn-1,6-bis(alkylurea) compounds and co-crystallized combinations thereof.

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7. A product shelf life monitoring system composition comprising an active substituted diacetylenic monomer component derived by recrystallization from a refluxed solution of said component.

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8. A composition according to claim 7 wherein the monomer component of said refluxed solution is selected from the group consisting of 2,4-hexadiyn-1,6-bis(alkylurea) compounds and co-crystallized combinations thereof.

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9. A composition according to claim 8 wherein the monomer component of said refluxed solution is selected from the group consisting of ethyl-, propyl-, and octyl-substituted 2,4-hexadiyn-1,6-bis(alkylurea) compounds and co-crystallized combinations thereof.

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10. A composition according to claim 7 wherein the solvent of said solution is selected from the group consisting of acetic acid and dimethyl formamide.

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11. A composition according to claim 10 wherein the period of reflux of said component solution extends from about one to 15 minutes.

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12. A product shelf life monitoring system comprising a substrate surface bearing an active indicator composition responsive in a visible change under incident thermal energy to which an associated product is susceptible, said indicator

composition comprising an active substituted diacetylenic monomer component derived by recrystallization from a refluxed solution of said component.

5 13. A system according to claim 12 wherein said associated product is a foodstuff.

14. A system according to claim 12 wherein said associated product is a medicament.

10 15. A system according to claim 12 wherein the monomer component of said refluxed solution is selected from the group consisting of 2,4-hexadiyn-1,6-bis(alkylurea) compounds and co-crystallized combinations thereof.

15 16. A system according to claim 12 wherein the monomer component of said refluxed solution is selected from the group consisting of ethyl-, propyl-, and octyl-substituted 2,4-hexadiyn-1,6-bis(alkylurea) compounds and co-crystallized combinations thereof.

20 17. A system according to claim 16 wherein the solvent of said solution is selected from the group consisting of acetic acid and dimethyl formamide.

25 18. A system according to claim 17 wherein the period of reflux of said component solution extends from about one to 15 minutes.